

# Gearing up for No-Dig

In January this year, the South African Society for Trenchless Technology announced winning the bid to host the International Society for Trenchless Technology's No-Dig International Conference. SASTT vice-president **Sam Efrat** and board member **Alaster Goyns** share what lies ahead.

**A**t the most recent 33rd annual No-Dig International Conference and Exhibition, held in Istanbul, Turkey, presentations were made to host the 2018 event by FiSTT (Finnish Society bidding for Helsinki), RoSTT (Romanian Society bidding for Bucharest) and SASTT (South African Society bidding for Cape Town). Following a hotly contested bid, the ISTT (International Society) board selected SASTT to host the 2018 No-Dig International in Cape Town.

The event is to be held over a three-day period, from 17 to 19 September 2018, at the Cape Town International Convention Centre (CTICC). The CTICC was chosen as it is the most popular convention centre in South Africa, as well as being the premium destination for international tourism. It is expected that the event will attract as many as 1 000 local and international visitors from as many as 50 countries. In addition to the exhibition and conference, additional highlights of the event will include the Chairman's Dinner, Opening Event, Gala Dinner, Partners' Excursions in and around Cape Town, and various entertainment and festivities during the event. The Westrade Group has also been confirmed

as the professional conference organiser for South Africa in 2018. Westrade's experience in organising No-Dig International events is second to none. Having organised the very first No-Dig International in 1985 in London, the Westrade Group has subsequently gained worldwide experience organising nearly 100 trenchless events in many overseas locations, including South East Asia, the Middle East, Africa and Europe.

South Africa's local No-Dig South Africa (NDSA) event is usually held every two to three years, and was due to be held in 2017. However, in preparation for the

- 1 A horizontal directional drilling project reducing disruptions beneath a busy motorway
- 2 International Society for Trenchless Technology award-winning spiral wound project (2012)
- 3 Sewer blockage detected using CCTV camera technology
- 4 Butt-welding in progress at the Parktown reservoir in the Johannesburg northern suburbs
- 5 Sewer sliplining in Pentz Drive, Cape Town
- 6 Cape Town cure-in-place pipe undergoing ultraviolet light treatment

No-Dig International event, the local conference will be incorporated into the 2018 international event.

## Selection process

Each year, at the annual board meeting of the ISTT board, there is fierce competition from various countries vying to host the international conference and exhibition. This meeting is customarily held on the Sunday before the start of that year's No-Dig International Conference and Exhibition.

Up to 27 worldwide affiliated member societies are represented at the board meeting, in addition to the executive committee members of the ISTT. Potential host countries first need to nominate their society's intention to bid four years ahead of time. Thereafter, they are called upon to present their bids three years in advance.

## Past No-Digs

SASTT, in conjunction with ISTT, has previously hosted two NDSA events – NDSA 2011 and NDSA 2014. Both events were held over a two-day period at the CSIR International Convention Centre in the City of Tshwane, and attracted a large number of local and international exhibitors and delegates.

The events comprised an exhibition that was complemented by a conference programme incorporating the ISTT Trenchless Masterclass – led by international experts Dr Sam Ariaratnam and Dr Dec Downey, both former presidents of the ISTT. Local and international speakers participated in these events, providing case study presentations. Delegates afterwards commented they'd found these platforms ideal for learning, debating, sharing knowledge, benchmarking, and networking with like-minded industry colleagues. A certificate of attendance was provided to all conference delegates and South African professional delegates received Continuing Professional Development (CPD) points.

## Past exhibitions

Visitors to NDSA 2011 and 2014 were provided with a "one-stop-shop" exhibition of the highest quality, where they could





examine and evaluate a wide range of equipment and services demonstrating trenchless technology and its capabilities.

Among the displays were horizontal directional drilling rigs, pipe rammers, mulling and pipe bursting systems, CCTV pipe inspection and surveying systems, pipes of various materials and function, innovative pipe lining methods and materials, pipeline cleaning and location equipment, and consulting services.

**No-Dig 2018**

A working group of SASTT board members has been formed to put together a promotional effort that has the twofold purpose of ensuring that relevant persons are aware of No-Dig SA and will attend, and to create an awareness of what TT can do and the techniques available locally. Detailed activities include:

- identifying key decision-makers in the municipal and water authorities
- preparing a series of mini seminars (half day) and breakfast seminars that will cover TT in general and certain topics, which will be stand-alone events; in addition, looking for opportunities to piggyback on events arranged by other organisations. To date, generic presentations have already been prepared and delivered on six occasions through other infrastructure events
- gathering or producing literature to support the presentations

- obtaining validation of these events so that attendees will be credited with CPD points
- arranging promotional events in the country's seven metros and other provincial capitals as well as through the various professional bodies that represent the construction industry
- maintaining contact with attendees to ensure that they are aware of future events.

**Long-term benefits**

The fact that the services in urban areas previously only provided for about 20% of the population has been compounded by the fact that about 65% of the populace is now urbanised, and this figure is rapidly growing.

This is exacerbated by the fact that urbanisation has generally taken place through densification. As a result, there is a serious backlog in service provision. Under these circumstances, the services needed can't be effectively installed using traditional open-cut methods.

Additionally, South Africa's brain drain in recent years hit the engineering sector particularly hard. Due to the current skills shortage and lack of hands-on experience, there is a dearth of decision-makers that understand the benefits of TT for both rehabilitating existing services and installing new services. Events such as No-Dig

fulfil an important need by bridging the knowledge gap. A typical example is the use of pipe bursting to upsize existing reticulation systems, where upsizing a sewer to double its diameter increases its capacity by more than six times. Sewers that are rehabilitated and upsized using this technique not only provide additional capacity, but will provide a service that will probably last at least twice as long as the original sewer.

In addition to the technical advantages of using these techniques, it is not realised that, in many situations, the number of people employed using trenchless techniques on a project would be the same as would be employed using open-cut methods on the project. This comes with the added advantage that the costs may actually be lower and the environmental and social disruption would be minimal.

Awareness raised by hosting No-Dig 2018 in South Africa will result in far more decision-makers considering and using TT for installing new and rehabilitating existing services, which would speed up the elimination of service backlogs.

This will grow the trenchless market locally, which could potentially be 7 to 10 times its current size. It would do this by building up the skills within the trenchless industry and, at the same time, providing sustainable employment opportunities. **35**

**Trenchless Technology Specialist**



**Our range of services include:**

- Pipe Bursting
- Horizontal Directional Drilling
- Pipe Rehabilitation
- Slip Lining
- Pipe Ramming
- CCTV Inspection
- Dewatering
- Industrial Pipe Cleaning
- HDPE Welding
- Deep Excavation and Shoring
- Underground Service Detection
- Close-fit lining: COMPACT PIPE



## Award-winning trenchless tech

The proud winners of the SASTT  
Joop van Wamelen Award

**M**embers of the Southern African Society for Trenchless Technology (SASTT) once again competed for the coveted Joop van Wamelen Award of Excellence by nominating their best projects. The PRASA Park Station Sewer and Stormwater Upgrade was selected as the winning project for 2015, at SASTT's 25th AGM held at Johannesburg Water's Sandfontein Depot earlier this year.

Consulting engineering firm SMEC South Africa, in partnership with contractor Trenchless Technologies, showcased some groundbreaking work while completing

the R37 million project on behalf of client PRASA Corporate Real Estate Solutions.

### Horizontal thinking

Conventional trenching techniques were not an option, as the line that had to be replaced ran underneath the railway lines at Park Station. For this reason, horizontal directional drilling (HDD) was selected as a solution. HDD was used to drill a new 250 mm HDPE pipeline diagonally underneath the train tracks at Park Station in order to connect existing manholes with the new main-line manhole constructed on platforms PF11 and PF12. A new 250

mm HDPE line was also drilled from the new manhole on PF11 to PF12 to the municipal connection manhole under Harrison Avenue Bridge. All sewage flowing from the aboveground shopping outlets and toilets between PF1 and PF10 is now collected by four 110 mm diameter uPVC pipelines, supported by a service tray for easy access and visible inspection.

Four 110 mm uPVC pipelines drop vertically and offload sewage into platform manholes, as well as a new manhole constructed on PF9 to PF10. Easy accessibility was prioritised to ensure effective future maintenance. **35**

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## Nearly Half a Million Metres of **TRENCHLESS PIPE** Successfully Installed



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Horizontal Directional Drilling • Guided Rock Drilling • Bores of 1200mm  
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RPC is a three layer co-extruded pipe with outer and inner layers of advance PE100-RC polymer and a PE100 core, that conform to ISO 4427.2 and PAS1075.

**Rare Plastics** in conjunction with its technology partner Borealis, has produced a water and sewer pipe specifically for AIT (Alternative Installation Techniques).



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PE100-RC is a specifically developed advanced polymer that resists the effects of notches, scores, scratches, grooves and point loads that may result from the trenchless installation technique used or installation without selected or imported bedding and embedding material.

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# Pipe solutions, not pipe dreams



One of the main problems in South Africa's water pipelines is that our old infrastructure has been put under pressure through urbanisation and can no longer cope with demand. Trenchless technologies offer an ideal solution.

**M**aintaining pipelines is a focus point that should always be carried out as a routine; unfortunately, due to a lack of funding and other related issues, this has been neglected. This not only causes a loss in revenue, but also a loss of our most precious resource, water. The rehabilitation of existing infrastructure, however, should always have 25 to 50 years of life in mind when done. Demand and pressure on water infrastructure will always increase. Another focus point should be the proper management of the rehabilitated assets.

## Pipe cracking and bursting

Pipe cracking and bursting is a trenchless rehabilitation technology that is used for the rehabilitation of existing pipe infrastructure.

The basis of the technology is the fact that pipe systems that deliver services can be rehabilitated without the need to open up the ground and excavate trenches to replace existing piping. New pipe cracking technology (with different processes) now allows pipes to be replaced efficiently, and with minimum disruption to existing infrastructure – a definite advantage when considering cost and time. Given the correct parameters, certain pipe systems can even be upgraded to bigger capacity.

## Market solution

The Rare Plastics Division recently launched a product aimed specifically at the pipe cracking market called the RPC pipe (Rare Plastics' co-extruded pipe). RPC is a three-layer co-extruded pipe with outer and inner layers of advanced PE100-RC polymer and a PE100 core.

PE100-RC is a specifically developed advanced polymer that resists the effects of notches, scores, scratches, grooves and point loads.

"These types of damage are common when using standard PE100 material for pipe cracking or pipe bursting applications. An additional advantage of RPC pipe is that the pipe can be designed to suit a specific application. The wall thickness of the RC material can be altered and changed to suit different applications and ground conditions.

Additionally, rapid crack propagation and slow crack growth are prevented when using RPC pipe for trenchless rehabilitation applications like pipe cracking and bursting," comments Carl von Graszouw, manager: Pipeline Services, Rare.

## The Rare Plastics Division recently launched a product aimed specifically at the pipe cracking market

**BELOW** Carl von Graszouw, manager: Pipeline Services, The Rare Group

## Pipe range

The Rare Group offers a wide range of pipes, with Rare Trading offering a comprehensive range of products, combining steel and plastic pipes, fittings, couplings and valves in a complete package for the contractor or end user.

"All products represented by Rare conform to international or national quality standards. To enhance quality and traceability of products, Rare also offers a cut-to-length, hard-stamping and colour-coding service to the market. Rare's services also include in-house fabrication of spools, closures and fittings," concludes Graszouw.

Rare Trading customers are not just limited to the municipal water market and include petrochemical, mining and other engineering industries. The company also boasts major supply contracts with Sasol and other large, local mining groups. **35**

